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EXAMINER	
JARRETT, SCOTT L	
ART UNIT	**PAPER NUMBER**
3623	

DATE MAILED: 10/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/788,470	REINSMA ET AL.	
	Examiner	Art Unit	
	Scott L. Jarrett	3623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *08 August 2005, 16 May 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-43 and 80-89* is/are pending in the application.

4a) Of the above claim(s) *44-79 and 90-92* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-43 and 80-89* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

EA

DETAILED ACTION

1. This Non-Final Office Action is responsive to Applicant's restriction election filed August 8, 2005 and amendment filed July 20, 2005.

Response to Arguments

2. Applicant's arguments, filed July 20, 2005 with respect to the rejection(s) of claim(s) pending claims 1-43 and 80-89 have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection set forth below.

Election/Restrictions

3. Applicant's election without traverse of claims 1-43 and 80-89 in the reply filed on August 8, 2005 is acknowledged.

Claims 44-79 and 90-92 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on August 8, 2005.

Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim

remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Title

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Method and System from Selecting Building Materials that Meet Project Criteria.

Claim Objections

5. Claim 89 is objected to because of the following informalities: the claim utilizes the acronym CAD instead of spelling out computer-aided-design (CAD). Appropriate correction is required.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

7. Claim 87 is rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one

skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Regarding Claim 87 the disclosure fails to state or teach one of ordinary skill in the art the how to *guarantee* the achievement of a target requirement without this disclosure one of ordinary skill in the art would be unable to practice the invention without undue experimentation.

8. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 16 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 16 recites the limitation "the building code" in Claim 3. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 102

9. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

10. Claims 1-2, 7, 13-14, 17-20, 25, 30-31, 33, 42-43, 82, 84-85 and 89 are rejected under 35 U.S.C. 102(b) as being anticipated by Building Design Advisor (BDA) developed by Lawrence Berkeley National Laboratory University of California, Berkeley as evidenced by at least the following published articles:

I. Papamichael K. et al., Building Design Advisor: automated integration of multiple simulation tools (1997), herein after reference A;

II. Papamichael K. et al., Product modeling for computer-aided decision making (1999), herein after reference B; and

III. Papamichael K., Application of information technologies in building design decisions (1999), herein after reference C.

Regarding Claims 1-2 and 33 BDA teaches a method and system for selecting items (components, systems, products, materials, etc.) to be used in the construction and/or retrofit of a building (structure, office, residence, project, etc.) wherein the items are selected based on the iterative prediction and evaluation of a plurality of projects/structures (designs) performance (energy, economics, cost, environmental

impact, etc.) using multiple criteria (values, parameters, etc.; reference A: Abstract; Figures 3, 5, 8; reference B: Column 1, Paragraphs 1-2, Page 1; Column 2, Paragraph 4, Page 2; Figure 1; reference C: "The main objective of the Building Design Advisor (BDA) project is to develop a computer-based tool that allows building decision-makers to quickly and easily integrate energy considerations into decision making throughout the early phases of building design.", Column 2, Paragraph 1, Page 3; Figures 1-2; Page 14).

BDA further teaches that the method and system for iteratively designing (e.g. selecting components/items, layouts, etc.) and evaluating projects/structures comprises a plurality of modules (sub-systems, sub-components, third party tools, etc.) including but not limited to: weather data, default value selector, case studies, cost estimating, environmental impact, building rating, CAD software, electronic product catalogs, energy consumption/usage, cost libraries and the like (reference A: Abstract; Figure 1).

More specifically BDA teaches a method and system for selecting items (components, materials, elements, etc.) for a project (effort, initiative, building, etc.) within a criteria (parameter, value, threshold, energy, economics, comfort, aesthetics, etc.), wherein the items may be used in construction project comprising:

- inputting (entering, submitting, providing, etc.) project information including project criteria (schematic design editor, building browser, prototype database, CAD files, building model, etc.; reference A: Abstract; Pages 3, 6, 11; Figures 1, 5-8);

- determining (selecting, calculating, estimating, etc.) sets of items (components, elements, materials, systems, equipment, etc.) based on the project information and

that meet the project criteria (reference A: Abstract; reference B: Figures 1-3; reference C: Column 2, Paragraph 4, Page 1; Column 1, Paragraph 1, Page 2; Figure 1);

- calculating (simulating, predicting, estimating, evaluating, modeling, etc.) for each set of items two or more values (first, second, total first/second value, attributes, parameters, cost, energy usage, comfort, performance, etc.; reference A: Page 3; Figures 3-4; reference B: Page 1; Column 1, Paragraph 1, Page 8; reference C: Column 2, Paragraph 1, Page 14);

- selecting (choosing, design selection, etc.) a set of items based on the calculated value (performance, economics, decision desktop; reference A: Abstract; Figure 3; reference C: Column 2, Paragraph 1, Page 3; Figures 1-2);

- displaying to a user the selected set of items that meet the project criteria (building browser, decision desktop; decision desktop, building browser, etc.: reference A: Abstract; "Graphical User Interface", Page 6; Figures 1, 3-5; reference C: "User Interface", Pages 8-9; Figures 10-11); and

- storing the calculated value(s) in a database (project database, prototypes database, third party databases, etc.; reference B: Column 2, Page 2; Figure 2; reference C: Column 2, Paragraph 1, Page 5).

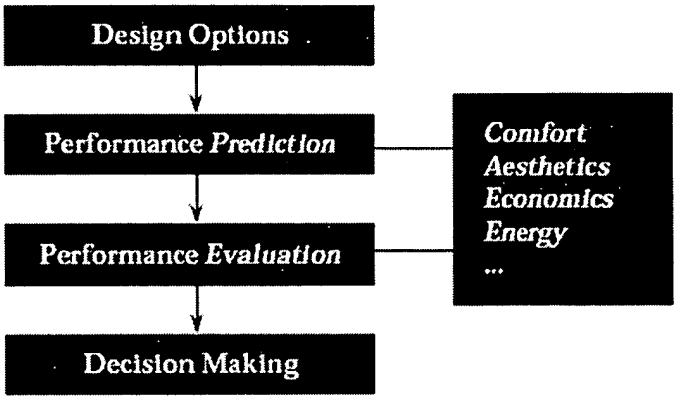

Figure 1. Building design decisions require performance prediction and evaluation with respect to multiple performance considerations.

Figure 1: reference C: Figure 1

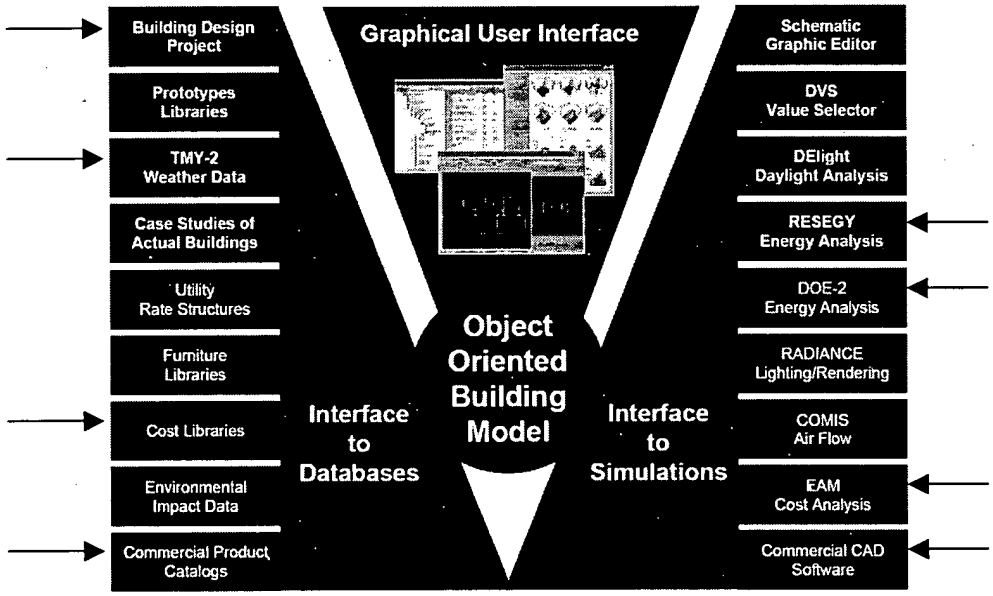

Figure 2. The Building Design Advisor is composed of a central data model that is linked to a graphical user interface and multiple simulation tools and databases.

Figure 2: reference C: Figure 2 (emphasis added)

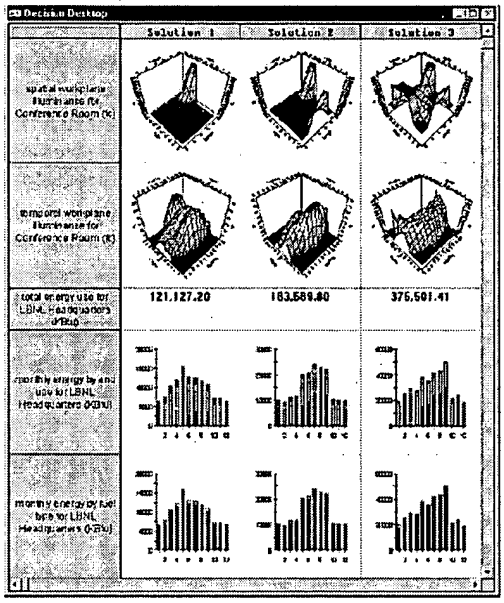

Figure 3. The Decision Desktop allows the user to compare multiple alternative designs with respect to any number of input and output parameters addressed by the simulation tools linked to the BDA.

Figure 3: reference A: Figure 3

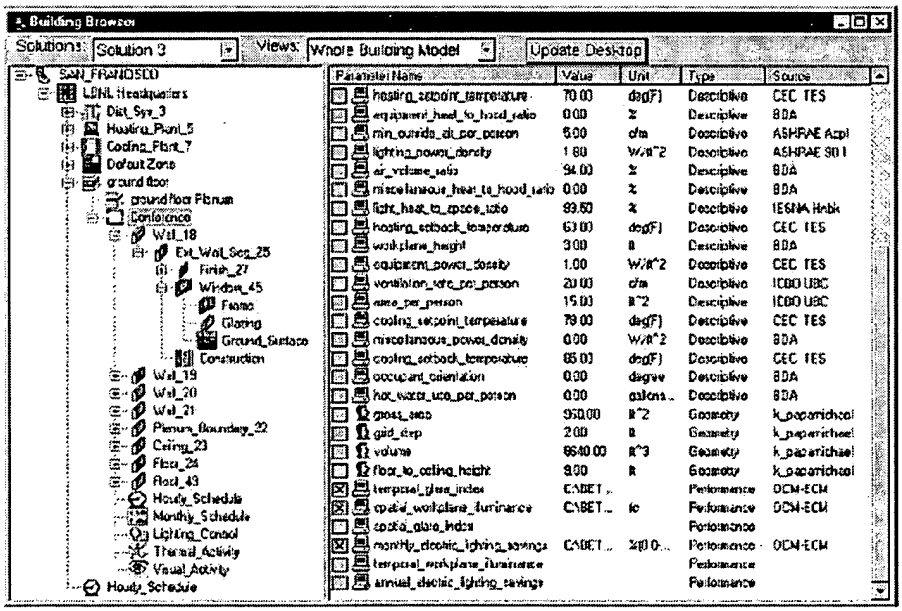

Figure 5. The Building Browser allows the user to quickly navigate through the object-based representation of the building and its context, and select any number of input and output parameters for display in the Decision Desktop.

Figure 4: reference A: Figure 5

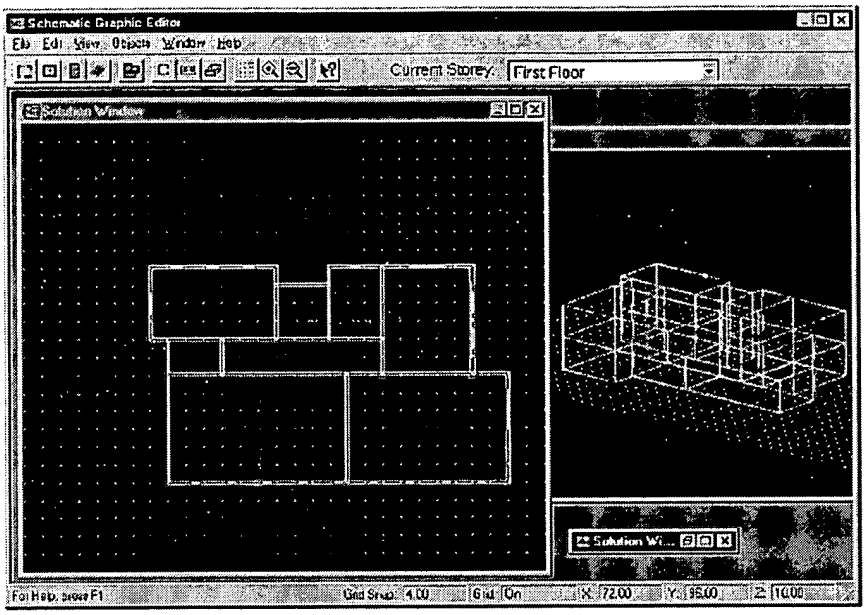

Figure 8. The Schematic Graphic Editor allows the user to draw and modify the geometry of building objects, and supports the display of multiple design alternatives, in their own windows.

Figure 5: reference A: Figure 8

Regarding Claim 7 BDA teaches a system and method for selecting items for a project/structure wherein at least one database further comprises a plurality of project values and associated item values (project database, prototypes database, cost database/libraries, etc.; reference B: Column 2, Page 2; Figure 2; reference C: Column 2, Paragraph 1, Page 5).

Regarding Claim 13 BDA teaches a system and method for selecting items for a project/structure wherein the project value is an item cost value (parameter, cost libraries; reference C: Column 1, Paragraph 2, Page 1; Column 1 Paragraph 1, Page 2;

Figure 2).

Regarding Claim 14 BDA teaches a system and method for selecting items for a project/structure wherein the criteria is based on the project information (reference A: Abstract; reference B: Figures 1-3; reference C: Column 2, Paragraph 4, Page 1; Column 1, Paragraph 1, Page 2; Figure 1).

Regarding Claims 17-18 BDA teaches a system and method for selecting items for a project/structure wherein the project information comprises structural information including walls, ceilings, floors, doors, glazing, slab perimeter *or* crawl space (schematic graphic editor, building browser; reference A: Pages 9-12; Figures 5, 8; reference C: Pages 9-12; Figures 7-12).

Regarding Claims 19-20 BDA teaches a system and method for selecting items for a project/structure wherein the project information comprises mechanical equipment information including a forced air furnace, boiler, heat pump *or* air conditioner (HVAC, heating plant, cooling plant; reference B: Figures 7-8; reference C: Column 1, Paragraph 2, Page 4; RESEGY, Column 2, Paragraph 1, Page 13).

Further regarding Claims 19-20 it is noted that the specific labels applied to the one or more mechanical equipment items represent non-functional descriptive material and are not functionally involved in the steps recited nor do they alter the recited

structural elements. The recited method steps would be performed the same regardless of the specific labels applied to the mechanical equipment items. Further, the structural elements remain the same regardless of the labels applied to the mechanical equipment items. Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, *see In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); MPEP § 2106.*

Regarding Claim 25 BDA teaches a system and method for selecting items for a project/structure wherein each item (component, element, materials, system, equipment, etc.) is either a type of building material or a type of building system (reference A: Abstract; Pages 6, 9; Figures 1-6; reference B: Page 4; Figure 2).

Regarding Claims 30-31 BDA teaches that the system and method for selecting items for a project/structure further comprises updating the item values (first, second, etc.) and storing (sending) a document (information, data, etc.) containing updated item values to a server/database (schema database, project database, prototypes database; reference A: Pages 10, 12; reference B: Page 4; Figure 2).

Further regarding Claim 31, the method as claimed is merely configured to update a database/server (system) however the system does not actually perform the update. For the purposes of examination examiner assumes the applicant will amend

the claim to recite that method actually updates the database/server (system) with the updated item values.

Regarding Claim 42 BDA teaches that the system and method for selecting items for a project/structure further comprises sending/transmitting project/structure information via a network (reference A: "Distributed computing and multi-user collaborative design over the Internet is a major part of the long-term BDA vision.", Paragraph 3, Page 14).

Further regarding Claim 42, the method as claimed is merely adapted to coupled to a network however the system is not actually connected to a network or transmitting project/structure information. For the purposes of examination examiner assumes the applicant will amend the claim to recite that method actually sends/transmits project/structure information via a network.

Regarding 43 receiving and storing (database) updated material cost information (reference A: Abstract; reference B: "RS Means Cost Data", EAM Cost Analysis", Figure 1; reference C: "Cost Libraries", Figure 2).

Further regarding Claim 43, the method as claimed is merely adapted to receive and store updated material cost information however the system does not actually receive or store the updated information. For the purposes of examination examiner

assumes the applicant will amend the claim to recite that method actually receives and stores updated material cost information.

Regarding Claim 82 BDA teaches a system and method for selecting items for a project/structure wherein the building system is a HVAC system (HVAC, heating plant, cooling plant; reference B: Figures 7-8 reference C: Column 1, Paragraph 2, Page 4; RESEGY, Column 2, Paragraph 1, Page 13; Column 1, Paragraph 4).

Further regarding Claims 82 it is noted that the specific labels applied to the one or more building system(s) represent non-functional descriptive material and are not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific labels applied to the building system(s). Further, the structural elements remain the same regardless of the labels applied to the building system(s). Thus, this descriptive material will not distinguish the claimed invention from the prior art in terms of patentability, *see In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); MPEP § 2106.*

Regarding Claims 84-85 BDA teaches that the system and method for selecting items for a project/structure further comprises analyzing the interactions (relationships, interdependencies, etc.) between at least two items and a structural component

(system, building type, etc.) based on their values (reference A: Page 5; Figure 2; reference B: Pages 2, 5; Figures 7-8).

Regarding Claim 89 BDA teaches a system and method for selecting items for a project/structure wherein the project information is a computer-aided-design (CAD) file (reference A: Abstract; Page 11; Figure 1; reference B: "The Dual Model", Pages 7-8).

Claim Rejections - 35 USC § 103

11. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

12. Claims 3-6, 10-12, 15-16, 21-24, 26, 35-38, 40 and 80-81 are rejected under 35 U.S.C. 103(a) as being unpatentable over Building Design Advisor (BDA) as evidenced by at least the following:

I. Papamichael K. et al., Building Design Advisor: automated integration of multiple simulation tools (1997), herein after reference A;

II. Papamichael, K. et al., Product modeling for computer-aided decision making (1999), herein after reference B; and

III. Papamichael K., Application of information technologies in building design decisions (1999), herein after reference C;

as applied to claims 1-2, 7, 13-14, 17-20, 25, 30-31, 33, 42-43, 82, 84-85 and 89 above and further in view of MECcheck Software User's Guide Version 3.0 (April 2000, MECcheck).

Regarding Claim 3 BDA teaches a system and method for selecting items for a project/structure wherein determining sets of items further comprises calculating a value (project value, data, etc.) based on the project information/criteria and determining the set of items that meet multiple criteria (requirements, thresholds, constraints, etc.) as

part of the iteratively project/structure design and performance evaluation process (reference A: Page 12; reference B: Page 4; Figure 1; reference C: Column 2, Paragraph 2, Page 4).

BDA does not expressly teach determining that a set of items are in *compliance* with project values as claimed.

MECcheck teaches determining that a set of items is in compliance with a set of project values (e.g. energy/building codes) in an analogous art of project/structure performance analysis for the purposes of ensuring (guaranteeing) that a project/structure meets with applicable building codes prior to, during and after construction (Introduction: Pages 1, 4-5).

More generally MECcheck teaches a system and method for evaluating the performance of a selected set of items (e.g. a building design) wherein the performance is defined by the project/structure's compliance to selected building energy codes such as maximum U-factors, minimum R-values, insulation, HVAC, windows and the like (Introduction: Pages 1, 4-5) and further wherein building energy codes specify the thermal envelope requirements for the project/structure.

MECcheck further teaches that the system and method for selecting/evaluating items, such as insulation and windows, for a construction project is part of an iterative design process wherein trade-offs are made amongst the various project/structure items (Software Overview: "...enables you to quickly compare different insulation levels in

different parts of your building to arrive at a package that works best for you.", Page 1; Page 27). MECcheck teaches that the system utilizes project structural, weather, material, mechanical equipment (HVAC) and other information to evaluate the performance of the selected project/structure items (Appendix C: Building Envelope, Pages 1-2; Software Overview: Pages 15-21, 27-29).

MECcheck further teaches that the project/structure performance analysis system and method provides information such as maximum UA, your UA as well as percent better/worse than code (Software Overview: Pages 3-4, 15-21, 27-29).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items meeting within project/structure criteria as taught by BDA would have benefited from determining that a set of project/structure items wherein in compliance with at least one project value (e.g. code) in view of the teachings of MECcheck; the resultant system enabling building decision-makers to determine that a set of items (project/structure design) is in compliance with a set of project values (energy/building codes) thereby ensuring (guaranteeing) that the project/structure design (set of selected item) meets with applicable building codes prior to, during and after construction (MECcheck: Introduction: Page 1, 4-5).

Regarding Claims 4-5 BDA teaches a system and method for selecting items for a project/structure wherein determining sets of items further comprises iterating through

combinations of item values (first, second, parameters, selections, multiple designs, etc.) and determining (selecting, choosing, calculating, etc.) sets of items that meet project/structure criteria (first/second project value, parameter, criteria, goal, target, design criteria, etc.; reference A: Abstract; Figures 3, 5, 8; reference B: Column 1, Paragraphs 1-2, Page 1; Column 2, Paragraph 4, Page 2; Figure 1; reference C: "The main objective of the Building Design Advisor (BDA) project is to develop a computer-based tool that allows building decision-makers to quickly and easily integrate energy considerations into decision making throughout the early phases of building design.", Column 2, Paragraph 1, Page 3; Figures 1-2).

Regarding Claim 6 BDA teaches that the system and method for selecting items for a project/structure further comprises storing in a database a plurality of project values and item values (second project values, first item values, project database, prototypes database, third party databases, etc.; reference B: Column 2, Page 2; Figure 2; reference C: Column 2, Paragraph 1, Page 5).

Regarding Claim 10 BDA teaches a system and method for selecting items for a project/structure wherein a project value is a U value (1/R, thermal conductance/performance; reference B: Column 1, Paragraph 1, Page 3; Column 2, Paragraph 1, Page 7).

While BDA teaches the utilization of a plurality of project/structure values including but not limited to U-values to measure an items/structures/products performance BDA does not expressly teach that the U-value is a UA value (UA= U-factor x area) as claimed.

MECcheck teaches that a project value is a UA value, in an analogous art of project/structure performance evaluation, for the purposes of evaluating and ensuring that the thermal performance of a building (e.g. UA value) complies with building energy codes (Introduction: Page 5, Bullet 1; Software Overview: Pages 1, 3-4; Appendix B: Pages 1-2, Definitions: Page 3).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for iteratively designing (i.e. selecting project items) and evaluating project/structure designs and evaluating their ability to meet a plurality of performance requirements/criteria (cost, energy, etc.) as taught by BDA would have benefited from determining/evaluating a project/structure's UA value/factor in view of the teachings of MECcheck; the resultant system enabling users to evaluate the project/structure's overall energy performance and/or to ensure that the selected set of items for the project/structure comply with building energy codes (MECcheck: Introduction: Pages 1, 4-5).

Regarding Claim 11 BDA teaches a system and method for selecting items for a project/structure wherein the project value is a glazing value (reference C: "The design decision is now reduced to finding a glazing, which will reduce energy requirements to the extent possible.", Column 2, Paragraph 2, Page 4; Column 1, Paragraph 1, Page 5).

While BDA teaches the utilization of a plurality of project/structure values including but not limited to glazing and other window related parameters BDA does not expressly teach that a project value is a glazing *area percentage* as claimed.

MECcheck teaches that a project value is a glazing area in analogous art of project/structure performance evaluation for the purposes of selecting items that meet/comply with project criteria such as building energy codes (MECcheck: Appendix B: Pages 1-2; Definitions Page 3; Software Overview: Page 15).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for designing projects/structures that meet a plurality of criteria, specifically its ability to evaluate designs based on glazing values, as taught by BDA would have benefited utilizing glazing *area* values as part of the design evaluation process in view of the teachings of MECcheck; the resultant system enabling users to determine/select the glazing area that meet the design requirements and/or building energy codes (BDA: reference C: "The design decision is now reduced to finding a

glazing, which will reduce energy requirements to the extent possible.", Column 2, Paragraph 2, Page 4).

Neither BDA nor MECcheck expressly teach that the glazing area is represented as a percentage as claimed.

Official notice is taken that representing values using percentages is old and very well known, specifically it is old and well known to represent project/structure (building, etc.) glazing values using glazing area percentages wherein such percentages represent the portion (fraction, percent) of a structure having windows, doors or other fenestration elements.

It would have been obvious to one skilled in the art at the time of the invention that the system and method for designing and evaluating projects/structures that meet a plurality of performance criteria wherein at least one of the criteria includes a glazing area as taught by the combination of BDA and MECcheck would have benefited from representing the fraction/portion of the building/envelope (project, structure, item, component, etc.) having fenestration (windows, doors, etc.) in view of the teachings of official notice.

Regarding Claim 12 BDA does not expressly teach that one of the project values is an R-value as claimed.

MECcheck teaches that one of the project values is an R-value in an analogous art of project/structure performance evaluation for the purposes of ensuring that a set of selected items (design) meets building energy codes (Introduction: Page 5, Bullet 1; Page 6; Definition: Page 4).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for designing projects/structures that meet a plurality of criteria as taught by BDA would have benefited utilizing R-values as part of the design evaluation process in view of the teachings of MECcheck; the resultant system enabling users to determine/select the insulation and other project/structure items that meet the design requirements and/or building energy codes (minimum R-value, trade-off analysis, etc.; MECcheck: Compliance Example, Pages 27-29; Appendix D: Pages 1-2).

Further regarding Claims 12 it is noted that the specific labels applied to the one or more project/structure value(s) represent non-functional descriptive material and are not functionally involved in the steps recited nor do they alter the recited structural elements. The recited method steps would be performed the same regardless of the specific labels applied to the project/structure value(s). Further, the structural elements remain the same regardless of the labels applied to the project/structure value(s). Thus, this descriptive material will not distinguish the claimed invention from the prior art in

terms of patentability, *see In re Gulack, 703 F.2d 1381, 1385, 217 USPQ 401, 404 (Fed. Cir. 1983); In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994); MPEP § 2106.*

Regarding Claims 15-16 BDA teaches a system and method for selecting items for a project/structure wherein default project values are generated based at least in part on building codes/standard (reference A: Page 12, Bullets 1-4).

BDA does not expressly teach that one of the criteria for selecting items comprises a portion of a building code as claimed.

MECcheck teaches selecting/evaluating project/structure items based on the selected item(s) ability to meet/comply with a building energy code in an analogous art of evaluating the performance of project/structure designs for the purposes of ensuring that a project/structure meets applicable building codes prior to, during and after construction (Introduction: Pages 1, 4-5; Software Overview: Pages 25-26).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting and evaluating project/structure designs (items, components, etc.) as taught by BDA would have benefited from further evaluating the selected project/structure items ability to meet/comply with building energy codes in view of the teachings of MECcheck; the resultant system enabling

building-decision-makers to ensure their project/structure design comply with local/national building codes (Introduction: Pages 1, 4-5).

Regarding Claim 21 BDA teaches that the system and method for selecting items for a project/structure as part of an iteratively design and evaluation process as discussed above.

BDA does not expressly teach that the project information further comprises upgrade information as claimed.

MECcheck teaches analyzing additions/renovations/alterations to existing projects/structures (i.e. upgrades, improvements, etc.) wherein the project information comprises upgrade information and calculating a project value further comprises increasing the project value based on the upgrade information and re-determining sets of items that are in compliance with the increased project value in an analogous art of project/structure performance evaluation for the purposes of ensuring added/updated project items comply with building codes (Introduction: "What buildings must comply?", Page 1; Appendix A: Additions Pages 1-2; Definitions: Additions, Alterations, Page 1).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items within project performance criteria as taught by BDA would have benefited from analyzing both new

and existing projects/structures (upgrades, retrofit, update, renovations, additions, etc.) in view of the teachings of MECcheck; the resultant system and method enabling building decision-makers to compare/contrast alternative building/project designs (selected sets of components) thereby ensuring upgrade projects comply with building codes and/or to analyze the expected/predicted/estimated benefits of the new/upgraded project (MECcheck: Overview: Pages 1, 4-5; Appendix A: Additions, Pages 1-2).

Regarding Claim 22 BDA teaches a system and method for selecting items for a project/structure wherein the project information include at least one energy saving component (energy saving strategies, energy efficient components, etc.; reference A: "Background", Page 2; reference C: Page 4, Column 1, Paragraph 2).

BDA does not expressly teach that the project information further comprises upgrade information as claimed.

MECcheck teaches analyzing additions/renovations/alterations to existing projects/structures (i.e. upgrades, improvements, etc.) wherein the project information comprises upgrade information and calculating a project value further comprises increasing the project value based on the upgrade information and re-determining sets of items that are in compliance with the increased project value in an analogous art of project/structure performance evaluation for the purposes of ensuring added/updated

project items comply with building codes (Introduction: "What buildings must comply?", Page 1; Appendix A: Additions Pages 1-2; Definitions: Additions, Alterations, Page 1).

MECcheck further teaches that at least one project item/component is an energy saving component (e.g. HVAC efficiency; Software Overview: Page 22).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items within project performance criteria as taught by BDA would have benefited from analyzing both new and existing projects/structures (upgrades, retrofit, update, renovations, additions, etc.) in view of the teachings of MECcheck; the resultant system and method enabling building decision-makers to compare/contrast alternative building/project designs (selected sets of components) thereby ensuring upgrade projects comply with building codes and/or to analyze the expected/predicted/estimated benefits of the new/upgraded project (MECcheck: Overview: Pages 1, 4-5; Appendix A: Additions, Pages 1-2).

Regarding Claim 23 BDA does not expressly teach indicating information regarding an efficiency percentage upgrade as claimed.

MECcheck teaches indicating a percentage upgrade (improvement, efficiency, percent better/worse) that an energy baseline/code/standard in an analogous art of project/structure item performance analysis and evaluation for the purposes of

indicating the extent to which a selected set of items (design) meets the building codes (Software Overview: Pages 3-4, 15-21, 27-29).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project items within a criteria as taught by BDA would have benefited from indicating the extent to which a design (news, existing, upgrade, set of items, etc.) does or does not meet a baseline/expected result and/or represents an improvement in view of the teachings of MECcheck; the resultant system enabling building decision-makers to readily discern whether or not their design meets given project criteria (MECcheck: Software Overview: Page 5).

Regarding Claim 24 BDA teaches that the system and method for selecting items for a project/structure further comprising determining energy consumption (usage, requirements) based on the selected set of items (reference C: RESGY "is used with annual weather data distributions to compute monthly totals for energy requirements by end use and energy source.", Column 2, Paragraph 2, Page 13; DOE-2 for energy analysis, Figure 2).

Regarding Claim 26 BDA does not expressly teach that one of the types of building materials includes insulation materials as claimed.

MECcheck teaches that one of the project items/components is insulation having R-values in an analogous art of project/structure performance evaluation for the purposes of ensuring that a set of selected items (design) meets building energy codes (Introduction: Page 5, Bullet 1; Page 6; Definition: Page 4).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for designing projects/structures that meet a plurality of criteria as taught by BDA would have benefited modeling insulation as part of the design evaluation process in view of the teachings of MECcheck; the resultant system enabling users to determine/select the insulation and other project/structure items that meet the design requirements and/or building energy codes (minimum R-value, trade-off analysis, etc.; MECcheck: Compliance Example, Pages 27-29; Appendix D: Pages 1-2).teaches that the system and method for selecting items for a project/structure wherein a type of building material includes insulation material.

Regarding Claim 35 BDA teaches a system and method for selecting items for a project/structure based on a plurality of performance criteria including but not limited to costs wherein the items are selected in order to optimize/achieve the desired performance (i.e. reduce initial costs, ongoing energy costs, etc.; reference C: "The design decision is now reduced to finding a glazing, which will reduce energy requirements to the extent possible.", Column 2, Paragraph 2, Page 4).

BDA does not expressly teach selecting items with the lowest total value as claimed.

MECcheck teaches selecting project items that have the lowest value and/or values that optimize one or more building energy codes/standards (criteria) in an analogous art of project/structure performance evaluation for the purposes of ensuring that a project/structure's selected set of items complies with building energy codes (e.g. minimum R-value, trade-off analysis, etc.; Introduction: Pages 1, 4-5; Appendix D: Trade-off Worksheet Guide, Pages 1-3; Software Overview: Compliance Example, Pages 27-30).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting items for project/structures that meet a plurality of criteria, including economic/cost and energy performance criteria, as taught by BDA would have benefited from minimizing item values (e.g. minimum R-value) in view of the teachings of MECcheck; the resultant system enabling building decision-makers to design and evaluate buildings (i.e. select items) that do not over and/or under comply/meet with project/structure criteria and/or codes (MECcheck: Software Overview: Page 4, Paragraph 1).

Regarding Claim 36 BDA does not expressly teach the evaluation/selection of different types of insulation based on energy codes/standards as claimed.

MECcheck teaches a system and method for evaluating/analyzing project/structure the comply with codes/standards, in an analogous art of project/item performance, further comprising:

- the selection/utilization of a plurality of well known insulation types including but not limited to blown, sprayed, (Basic Requirements Guide: Page 5), cavity insulation (Software Overview: Page 9), duct insulation (Basic Requirements Guide: Pages 5-6), HVAC piping insulation (Base Requirements Guide: Page 9), slab insulation (Definitions: Page 5), rigid foam (Software Overview: Page 9) and the like as well as defining various levels/depths of insulation by location (structural components);

- project criteria that is an energy code and that comprises a UA value for a given structure (Software Overview: Pages 9; Basic Requirements: Pages 5-6); and

- determining sets of insulation, in compliance with the energy code UA value, to be used in constructing the project by calculating a UA value based on at least part of the structure information and energy code (Introduction: Pages 1, 4-5; Software Overview: Pages 1, 3-4, 22; Paragraph 2, Page 8; Compliance Examples, Pages 27-30).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items within project criteria would have benefited from modeling/evaluating several types of insulations and their associated code UA values in view of the teachings of MECcheck; the resultant system

enabling designers to ensure their designs (alternative selections of building materials/equipment/items) comply with building codes/standards (MECcheck: Introduction: Pages 1, 4-5).

Regarding Claim 37 BDA teaches a system and method for selecting items for a project/structure wherein the system (database) includes (reference C: "The design decision is now reduced to finding a glazing, which will reduce energy requirements to the extent possible.", Column 2, Paragraph 2, Page 4; Column 1, Paragraph 1, Page 5):

- glazing value and associated items; and
- determining sets of items to be used in constructing the project by calculating at least on glazing value for the structure based on the structure information.

While BDA teaches the utilization of a plurality of project/structure values including but not limited to glazing and other window related parameters BDA does not expressly teach that a project value is a glazing *area percentage* as claimed.

MECcheck teaches that a project value is a glazing area in analogous art of project/structure performance evaluation for the purposes of selecting items that meet/comply with project criteria such as building energy codes (MECcheck: Appendix B: Pages 1-2; Definitions Page 3; Software Overview: Page 15).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for designing projects/structures that meet a plurality of criteria, specifically its ability to evaluate designs based on glazing values, as taught by BDA would have benefited utilizing glazing *area* values as part of the design evaluation process in view of the teachings of MECcheck; the resultant system enabling users to determine/select the glazing area that meet the design requirements and/or building energy codes (BDA: reference C: "The design decision is now reduced to finding a glazing, which will reduce energy requirements to the extent possible.", Column 2, Paragraph 2, Page 4).

Neither BDA nor MECcheck expressly teach that the glazing area is represented as a percentage as claimed.

Official notice is taken that representing values using percentages is old and very well known, specifically it is old and well known to represent project/structure (building, etc.) glazing values using glazing area percentages wherein such percentages represent the portion (fraction, percent) of a structure having windows, doors or other fenestration elements.

It would have been obvious to one skilled in the art at the time of the invention that the system and method for designing and evaluating projects/structures that meet a plurality of performance criteria wherein at least one of the criteria includes a glazing

area as taught by the combination of BDA and MECcheck would have benefited from representing the fraction/portion of the building/envelope (project, structure, item, component, etc.) having fenestration (windows, doors, etc.) in view of the teachings of official notice.

Regarding Claim 38 BDA teaches a system and method for selecting items for a project/structure by evaluating a plurality of items wherein the designs include glazing values as discussed above.

BDA does not expressly teach evaluating items based on glazing area percentages as claimed.

MECcheck teaches comparing selected items for a project/structure including the evaluation of glazing area as discussed above. MECcheck further teaches that the system and method for selecting project/structure items that comply with building codes/standards further comprises identifying the closeness (e.g. percent better/worse) of the selected project items (building design) to the building codes/standards for the purposes of enabling designers (users, architects, building decision-makers) to adjust their designs (e.g. make trade-offs, choose different components, etc.) in order to more closely meet the building codes/standards (Software Overview: Page 3; Page 4, Paragraph 1).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project items within criteria as taught by BDA would have benefited from evaluating/analyzing UA factors/values and selecting project items that comply with building energy codes based at least in part on those UA values in view of the teachings of MECcheck; the resultant system enabling designers to select project items that comply with building codes by enabling them to select a set of items that is closets to the required codes/standards (Software Overview: Page 3; Page 4, Paragraph 1).

Neither BDA nor MECcheck expressly teach that the glazing area is represented as a percentage as claimed.

Official notice is taken that representing values using percentages is old and very well known, specifically it is old and well known to represent project/structure (building, etc.) glazing values using glazing area percentages wherein such percentages represent the portion (fraction, percent) of a structure having windows, doors or other fenestration elements.

It would have been obvious to one skilled in the art at the time of the invention that the system and method for designing and evaluating projects/structures that meet a plurality of performance criteria wherein at least one of the criteria includes a glazing area as taught by the combination of BDA and MECcheck would have benefited from

representing the fraction/portion of the building/envelope (project, structure, item, component, etc.) having fenestration (windows, doors, etc.) in view of the teachings of official notice.

Regarding Claim 40 BDA teaches a system and method for selecting items for a project/structure wherein the system (database) includes climate control equipment and calculates energy usage/consumption based on the set of project/structure items including the climate control equipment information (DOE-2, HVAC, heating plant, cooling plant; reference B: Figures 7-8 reference C: Column 1, Paragraph 2, Page 4; RESEGY, Column 2, Paragraph 1, Page 13; Column 1, Paragraph 4).

BDA does not expressly teach that insulation is one of the selected project/structure items as claimed.

MECcheck teaches evaluating the impact of insulation and climate control equipment on a project/structure's performance and/or ability to comply with building codes in an analogous art of project/structure performance analysis for the purposes of ensuring the selected set of items (design) complies with building codes/standards (Introduction: "A major focus of the code provisions is on the building envelope insulation and window requirements", Page 1; Step 3, Compliance Process, Page 4; Software Overview: Compliance Example, Pages 27-30).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items that meet a plurality of criteria as taught by BDA would have benefited from taking into account the effect of insulation in view of the teachings of MECcheck; the resultant system enabling users to ensure the selected project/structure items comply with building energy codes including but not limited to codes requiring specific insulation/thermal performance values (MECcheck: Introduction: Page 1).

Regarding Claim 80 BDA does not expressly teach that a project criteria is an energy budget.

Official notice is taken that providing budgets for projects, such as energy budgets, provide a mechanism for defining design constraints and/or considerations for the project is old and well known.

For example commercial and/or residential projects/structures commonly have energy budgets wherein the user of the project/structure defines their expected/desired/budgeted energy costs at which point it is the role of the building decision-maker (architect, designer, etc.) to design a project/structure that conforms to the budget constraints identified by the end-customer.

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting items for a project within criteria including

costs/economics as taught by BDA would have benefited from enabling users to define budget constraints for the project including but not limited to energy budgets in view of the teachings of official notice; the resultant system ensuring projects/structures meet the end-customer's/building decision-makers requirements/constraints (e.g. building energy budget).

Regarding Claim 81 BDA does not expressly teach that one of the project values is an energy baseline.

MEC teaches that one of the project values is an energy baseline (standard, code, acceptable level, minimum requirement, etc.) which building designs (set of selected components) must minimally meet, in an analogous art of project/structure performance analysis for the purposes of ensuring designs/selected set of components meet baseline/required performance levels (Overview: Pages 1, 4-5).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project items/components within project criteria would have benefited from identifying an energy baseline in view of the teachings of MECcheck; the resultant system enabling building decision-makers to compare their designs with the baseline and ensure the meet or exceed the baseline requirements (MECcheck: Overview: Pages 1, 4-5).

13. Claims 8-9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Building Design Advisor (BDA) as evidenced by at least the following:

I. Papamichael K. et al., Building Design Advisor: automated integration of multiple simulation tools (1997), herein after reference A;

II. Papamichael, K. et al., Product modeling for computer-aided decision making (1999), herein after reference B; and

III. Papamichael K., Application of information technologies in building design decisions (1999), herein after reference C;

as applied to claims 1-2, 7, 13-14, 17-20, 25, 30-31, 33, 42-43, 82, 84-85 and 89 above and further in view of Bosch, Maria An Expert System for Cost-Effective Energy Efficiency Calculations (1996).

Regarding Claims 8-9 BDA teaches a system and method for selecting items for a project/structure wherein selecting a set of items further comprises:

- selecting items (components, materials, elements, activities, etc.) based on a plurality of performance criteria including but not limited to cost (e.g. lowest initial cost, life-time cost, etc.), energy savings, and the like (cost libraries, EAM (economic analysis module) Cost Analysis; reference C: Column 1, Paragraph 2, Page 1; Column 1, Paragraph 1, Page 2; Column 1, Paragraph 2, Page 4; Figure 2); and

- presenting (providing, sending, displaying, etc.) the set of selected items as discussed above.

BDA further teaches that the system utilizes (is integrated with) several modules/systems including EAM for cost analysis, DOE-2 for building energy analysis and cost libraries (reference C: Column 2, Paragraph 1, Page 2; Figure 2).

BDA does not expressly teach selecting items with the lowest value or subsequently presenting the selected lowest value items as claimed.

Bosch teaches selecting and presenting items with the lowest value (cost) in an analogous art of project/structure performance analysis and evaluation for the purposes of assisting designers (building decision-makers) select the most appropriate and cost effective materials/products (Page 23, Columns 1-2).

More generally Bosch teaches an expert system and method for selecting project items (materials, components, systems, equipment, etc.) wherein the system recommends the most cost-effective building components." (Page 23, Column 1, Paragraph 2) as part of an iterative design process wherein architects (designers, building decision-makers) iteratively design and evaluate alternative project/structure designs (selected sets of components) to ensure they meet a plurality of criteria including but not limited to costs (initial, lifecycle, etc.), building codes and the like thereby enabling the architect to "find the optimal combination of components." (Page 23, Column 2, Paragraphs 1-2; "this system would help designers select the most appropriate and cost-effective combination of materials for their buildings. The idea of improving methods to meet code, by looking at the whole energy problem....program

offers suggestions for improvement based on the most cost-effective alternatives.", Page 24, Column 1, Paragraph 2; "Other options are to increase the R values for the ceilings and walls and/or improve the air-conditioning efficiency. This prototype system chooses the option that, based on the area of the house, will create the least cost.", Page 24, Column 1, Paragraph 3).

Bosch further teaches that the component values include glass, ceiling, walls, mechanical equipment, insulation and the like (Page 23, Column 3, System Overview; Page 24, Column 1).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items that meet a plurality of performance criteria including but not limited to cost as taught by BDA would have benefited from selecting and presenting (recommending, identifying, etc.) project/structure elements having the lowest value (e.g. most cost-effective) in view of the teachings of Bosch; the resultant system enabling designers (architects, building decision-makers) to select the most appropriate (i.e. meet project criteria) and cost effective project/structure items (Bosch: Page 23, Column 2, Paragraphs 1-2).

14. Claims 27-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Building Design Advisor (BDA) as evidenced by at least the following:

I. Papamichael K. et al., Building Design Advisor: automated integration of multiple simulation tools (1997), herein after reference A;

II. Papamichael, K. et al., Product modeling for computer-aided decision making (1999), herein after reference B; and

III. Papamichael K., Application of information technologies in building design decisions (1999), herein after reference C;

in view of MECcheck Software User's Guide Version 3.0 (April 2000, MEC) as applied to claims 1-26, 30-31, 33, 35-38, 40, 42-43, 80-82, 84-85 and 89 above and further in view of Jung, Pyoung-Young, U.S. Patent Publication No. 2001/0037190.

Regarding Claims 27-28 BDA does not expressly teach generating a bill-of-materials based on the selected items as claimed.

Jung teaches generating a bill-of-materials based on the selected set of items (i.e. project take-off) and displaying (presenting, providing, etc.) the total amount of items required to build/construct the project, in an analogous art of construction for the purposes of automatically creating a bill-of-materials (take-off analysis sheet) that can be sent via the Internet to a plurality of users including but not limited to material suppliers/providers/vendors (Paragraphs 0002-0003, 0012, 0018, 0123-0124; Figure 10).

More generally Jung teaches a system and method for selecting project/structure items (material selection) and automatically generating a bill-of-materials (take-off analysis) for a set of selected project/structure items represented in a CAD file. Jung further teaches that the take-off system and method further sends/receives project information over a network as well as comprises a project item/component and material cost databases (Paragraphs 0038-0040) and has the ability to accept payment for services rendered (i.e. for creating a bill-of-material and cost estimate from a CAD file; Paragraphs 0113-0114).

It would have been obvious to one skilled in the art at the time of the invention that the method and system for selecting project items within project performance criteria as taught by BDA would have benefited from automatically generating a bill-of-materials based on the selected/identified design (selected components) and estimating the total amount of items required for the project/structure in view of the teachings of Jung; the resultant system enabler users (designers, construction managers, cost managers, building decision-makers) to easily identify and share the materials/items/components required for the project (Jung: Paragraphs 0008, 0012).

15. Claims 29, 32, 34, 80, 83 and 86-88 are rejected under 35 U.S.C. 103(a) as being unpatentable over Building Design Advisor (BDA) as evidenced by at least the following:

I. Papamichael K. et al., Building Design Advisor: automated integration of multiple simulation tools (1997), herein after reference A;

II. Papamichael, K. et al., Product modeling for computer-aided decision making (1999), herein after reference B; and

III. Papamichael K., Application of information technologies in building design decisions (1999), herein after reference C;

in view of MECcheck Software User's Guide Version 3.0 (April 2000, MEC) in view of Jung, Pyoung-Young, U.S. Patent Publication No. 2001/0037190 as applied to claims 1-28, 30-31, 33, 35-38, 40, 42-43, 80-82, 84-85 and 89 above and further in view of Wares, U.S. Patent Publication No. 2001/0044768.

Regarding Claim 29 BDA does not expressly teach generating a bill-of-materials as discussed above.

Jung teaches generating a bill-of-materials based on project/structure information provided in a CAD file as well as making the bill-of-materials available to a plurality of users including but not limited to material providers (vendors, suppliers, etc.) as discussed above.

Neither BDA or Jung teaches displaying supplier information based on the bill-of-materials as claimed.

Wares teaches displaying supplier information based on bill-of-material (project take-off) information in an analogous art of construction project management for the purposes of receiving bids from suppliers (contractors, manufacturers, vendors, etc.) to provide the products/service necessary to complete a construction project (Abstract; Paragraphs 0006-0007;Claim 5).

More generally Wares teaches a construction marketplace (portal) for the AEC (architecture, engineering and construction) industry wherein the system supports the complete AEC project lifecycle and provides project management and item/component (services, products, etc.) procurement capabilities (Abstract, Paragraphs 0006-0007).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items within project criteria and generating a bill-of-materials as taught by the combination of BDA and Jung would have benefited from displaying a list of suppliers based on the generated bill-of-materials in view of the teachings of Wares; the resultant system enabling users to receive bids from suppliers to provide the project items identified on the bill-of-materials (project take-off; Wares: Abstract; Claim 5).

Regarding Claim 32 BDA does not expressly teach that the system includes contractor schedule information or the subsequent determination of an installation schedule based on the contract information as claimed.

Wares teaches the request, receipt and evaluation of proposals/bids from suppliers (vendors, providers, manufacturers, contractors, subcontractors, etc.) based on the selected set of project items (bill-of-materials, take-off analysis; Abstract; Paragraphs 0006-0007; Figure 10; Claim 5)

Wares does not expressly teach the specific contents of the proposals/bids.

Official notice is taken that providing schedule and cost information as part of a proposal (contract, agreement, etc.) wherein proposals/bids include/provide information that is relevant and used in evaluating projects is old and very well known.

For example an architect might receive two nearly identical bids/proposals to construct the building (selected set of project items) however one of the proposal states the project can start this week and the other proposal states the contractor (builder, subcontractor, vendor, etc.) can not start until next year; depending on the requirements of the project starting sooner maybe better or worse than starting later or vice versa.

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items within project criteria

and requesting, receiving and evaluating bids/proposals from suppliers as taught by the combination of BDA and Wares would have benefited from including in the proposals/bids information regarding scheduling and costs associated with the construction (installation, development, etc.) of the project/structure in view of the teachings of official notice; the resultant system providing information commonly used in evaluating construction projects.

Regarding Claim 34 BDA teaches that the system and method for selecting items for a project/structure wherein each of the items is either a building material, building system or project structure and each has an item cost set of items (total first value, cost libraries/database, economic/cost criteria/analysis, etc.; reference C: Column 1, Paragraph 2, Page 1; Column 1 Paragraph 1, Page 2; Figure 2).

DBA does not expressly teach that the selected items have a total material cost as claimed.

Jung teaches that the selected items (bill-of-materials, take-off) have both individual component/item and project costs, in an analogous art of construction for the purposes of automatically creating a bill-of-materials (take-off analysis sheet) that can be sent via the Internet to a plurality of users including but not limited to material suppliers/providers/vendors (Paragraphs 0002-0003, 0012, 0018, 0123-0124; Figure 10).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items as taught by BDA with its ability to provide cost information and cost analysis would have benefited from providing a total material/item cost in view of the teachings of Jung; ; the resultant system enabler users (designers, construction managers, cost managers, building decision-makers) to be able to easily identify and share the materials/items/components required for the project (Jung: Paragraphs 0008, 0012).

Regarding Claim 83 BDA does not expressly teach utilizing insulation to comply with an energy baseline, that a project/structure criteria is an energy budget or determining an energy baseline as claimed.

MECcheck teaches utilizing a plurality of project items/components to meet an energy baseline (requirement, code, standard) including but not limited to the use of insulation to meet a building code wherein the building decision-maker generates an predicted energy baseline (rating, compliance report, etc.) demonstrating the project/structure's compliance to the building energy code (compliance report; Software Overview: Pages 1-3; Compliance Example Pages 27-30).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project items/components within criteria as

taught by BDA would have benefited from utilizing insulation to meet/exceed an energy baseline in view of the teachings of MECcheck; the resultant system being capable of demonstrating a project/structure's compliance with building codes/standards (MECcheck: Software Overview: Pages 1-3).

Regarding Claim 86 BDA does not expressly teach determining delay costs based on the installation schedule as claimed.

Official notice is taken that determining the cost of delays is old and very well known in construction project management for providing project managers information related to the status of the project and/or the impact of delays and other events on things such as the project budget/schedule.

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items within criteria would have benefited from determing the cost of delays to the installation/construction/building of the selecting items/project in view of the teachings of official notice; the resultant enabling users to monitor the impact of delays on project schedules and/or budgets.

Regarding Claim 87 BDA does not expressly teach guaranteeing the achievement of a target requirement (criteria, parameter, value, etc.) as claimed.

MECcheck teaches ensuring that a project/structure achieves a target requirement (building code) in analogous art of selecting project items/components for the purposes of ensuring a project/structure complies with the required building codes (Introduction: Pages 1, 4-5).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting items within a criteria as taught by BDA would have benefited from ensuring (guaranteeing) that the selected project/structure items met the required building codes (target requirements) in view of the teachings of MECcheck; the resultant system enabling users to guarantee/certify a project's design (selected set of items) meets target requirements defined by the building codes (MECcheck: Introduction: Pages 1, 4-5).

Regarding Claim 88 BDA does not expressly teach charging a fee as claimed.

Official notice is taken that professionals, including architecture, construction and engineering professionals that provide project/structure design and management, charge a fee for services provided/rendered to clients and/or to charge for the utilization and/or purchase of software is old and very well known in the art as a mechanism for compensating individuals and/or organizations for their products/services.

It would have been obvious to one skilled in the art at the time of the invention that the building performance evaluation system as taught by BDA would have been benefited from charging a fee for the utilization of the system in view of the teachings of official notice; the resultant system compensating individuals and/or organizations for their products/services.

16. Claims 39 and 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Building Design Advisor (BDA) as evidenced by at least the following:

I. Papamichael K. et al., Building Design Advisor: automated integration of multiple simulation tools (1997), herein after reference A;

II. Papamichael, K. et al., Product modeling for computer-aided decision making (1999), herein after reference B; and

III. Papamichael K., Application of information technologies in building design decisions (1999), herein after reference C;

in view of MECcheck Software User's Guide Version 3.0 (April 2000, MEC) as applied to claims 1-26, 30-31, 33, 35-38, 40, 42-43, 80-82, 84-85 and 89 above and further in view of Bosch, Maria An Expert System for Cost-Effective Energy Efficiency Calculations (1996).

Regarding Claim 39 BDA does not expressly teach the utilization of UA values as claimed.

MECcheck teaches adjusting (decreasing, increasing) the UA value as part of the design (selected items) trade-off analysis for determining a set of selected items that comply with the building codes (Introduction: Pages 1, 4-5; Software Overview: Pages 1, 3-4, 22; Paragraph 2, Page 8; Compliance Examples, Pages 27-30).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items within project performance criteria as taught by BDA would have benefited from performing trade-off analysis between the plurality of project items/components (alternative designs) in view of the teachings of MECcheck; the resultant system enabling designers to ensure their designs (alternative selections of building materials/equipment/items) comply with building codes/standards (MECcheck: Introduction: Pages 1, 4-5).

Neither BDA nor MECcheck expressly teach utilizing a decreasing a UA value by a certain percentage or and determining a lowest cost set of items based on the decreased UA value.

Bosch teaches identifying (selecting, presenting, recommending) a set of cost-effective (lowest cost) project/structure items, in an analogous art of construction/building material selection/analysis, based on the iteratively analysis/trade-off analysis of a plurality of project/structure values including but not limited to R values (R = 1/U) for the purposes of assisting designers in selecting the most cost effective and

appropriate project/structure designs (set of items; Page 23, Columns 1-2; Page 24, Column 1; Figure 1).

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project items within project criteria including the use of UA values as part of the performance evaluation as taught by the combination of BDA and MECcheck would have benefited from selecting items having the lowest cost (most cost effective) in view of the teachings of Bosch; the resultant system enabling designers (architects, building decision-makers) to select the most appropriate (i.e. meet project criteria) and cost effective project/structure items (Bosch: Page 23, Column 2, Paragraphs 1-2).

Regarding Claim 41 BDA teaches that the system and method for selecting items for a project/structure further comprising information on energy saving components (items, materials, equipment, etc.) used in constructing the project/structure and that project items have U-values as discussed above.

BDA does not expressly teach the utilization of UA values or selecting the project items having the lowest cost as claimed.

MECcheck teaches that a project value is a UA value, in an analogous art of project/structure performance evaluation, for the purposes of evaluating and ensuring

that the thermal performance of a building (e.g. UA value) complies with building energy codes (Introduction: Page 5, Bullet 1; Software Overview: Pages 1, 3-4; Appendix B: Pages 1-2, Definitions: Page 3) as well as performing trade-off analysis based on the UA and other project item/component values as discussed above.

It would have been obvious to one skilled in the art at the time of the invention that the system and method for iteratively designing (i.e. selecting project items) and evaluating project/structure designs to evaluate their ability to meet a plurality of performance requirements/criteria (cost, energy, etc.) as taught by BDA would have benefited from determining/evaluating a project/structure's UA value/factor in view of the teachings of MECcheck; the resultant system enabling users to evaluate the project/structure's overall energy performance and/or to ensure that the selected set of items for the project/structure comply with building energy codes (MECcheck: Introduction: Pages 1, 4-5).

Neither BDA nor MECcheck teaches selecting project/structure items (designs, components, equipment, etc.) have the lowest cost.

Bosch teaches selecting (identifying, recommending, etc.) project/structure having the lowest cost (most cost-effective) as discussed above.

It would have been obvious to one skilled in the art at the time of the invention that the system and method for selecting project/structure items utilizing a plurality of project item values including but not limited to UA values that meet a plurality of performance criteria including but not limited to cost as taught by the combination of BDA and MECcheck would have benefited from selecting and presenting (recommending, identifying, etc.) project/structure elements having the lowest cost (i.e. most cost-effective) in view of the teachings of Bosch; the resultant system enabling designers (architects, building decision-makers) to select the most appropriate (i.e. meet project criteria) and cost effective project/structure items (Bosch: Page 23, Column 2, Paragraphs 1-2).

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Broughton et al., U.S. Patent No. 5,920,849, teach a system and method for selecting project items/components for the purposes of generating a proposal (bid) for constructing the project/structure based on the selected components/items and costs.

- Hitachi, LTD., JP2001134665, teaches a system and method for selecting and estimating the amount of building materials (i.e. bill-of-materials, take-off analysis) from a project/structure drawing.

- Kuepper, DE 10019791, teaches a system and method for building construction wherein the project/structure design is optimized to meet energy

requirements (i.e. selecting building materials/items in order to meet energy requirements/criteria).

- Jung, KR2002023558, teaches a system and method for selecting project/structure items (materials) to be used in constructing a building (house) where users ca select items having the lowest cost by comparing prices amongst suppliers (vendors, producers, etc.).

- Rock Wool International, W0 02/50720, teaches a system and method for determining the building code compliance of a project/structure and its components/items wherein the user selects a plurality of construction materials and configurations (designs) which the system then uses to provide code compliance information.

- Carroll, William Leslie, Energy and Economic Optimization of Conduction Dominated Buildings (1986), teaches a method and system for determining project/structure performance using lifecycle costs (initial cost, usage, maintenance, etc.) to optimize project/structure performance (efficiency, thermal integrity, etc.).

- Rautiainen, Liisa et al., Expert systems for building materials (1992), teach an expert system (decision support, artificial intelligence, knowledge based, etc.) and method for selecting building materials/components.

- Hanijalic et al., Expert Systems and Computer Simulation in Energy Engineering (1992), teach the old and well known application of expert systems (decision support, artificial intelligence, etc.) to the simulation of building performance (energy).

- Cook, Hugh, Modeling energy efficient HVAC (January 1998) teaches a system and method for evaluating and designing a plurality of projects/structures (design alternatives) through the utilization/integration of a plurality of decision criteria such as costs, comfort, energy and the like. Cook further teaches that the Building Design Advisor system permits the use of a plurality of building/construction tools such as EnergyPlus, which is a combination/merger of BLAST and DOE-2.

- Lippiatt, Barbara, BEES Building for Environmental and Economic Sustainability (April 1998), teaches a system and method for selecting building materials/items within project criteria utilizing a plurality of performance factors (cost, energy consumption, economic, etc.).

- Overview of DOE-2.2 (June 1998) teaches a building energy analysis system and method that estimates/determines the energy use and cost for all types of buildings. DOE-2 uses a description of the building layout, constructions, usage, conditioning systems (lighting, HVAC, etc.) and utility rates provided by the user, along with weather data, to perform an hourly simulation of the building and to estimate utility bills.

- Parker et al., EnergyGauge USA: A residential building energy simulation design tool (September 1999), teaches a method and system for structure/project analysis/evaluation wherein the system comprises: climate/weather data, modeling interactions between/amongst components/materials, structural information (walls, ceilings, glazing, insulation etc.) and utilizes the DOE-2 energy simulation engine for analyzing energy savings and renewable energy options. Parker et al. teach that the system and method for analyzing/evaluating project/structure items works in conjunction

with energy usage/ratings and code compliance systems such as HERS and MECcheck and has been shown to accurately predict/evaluate project/structure retrofit performance.

- BEES 2.0 Web Pages (January 2000), teaches a system and method for selecting project/structure items that meet project criteria.

- WinEstimator, Inc. and PurchasePro.com Create a Construction Industry E-commerce Portal (May 2000), teaches an e-commerce portal for the AEC industry for supporting the design, management and material/service procurement for construction projects. The article further teaches the commercial availability of a system and method for generating bill-of-material and cost estimates for construction projects.

- Tunstall, Gavin, Managing the Building Design Process (April 2000), teaches an iterative project/structure design method wherein the method includes the consideration of green issues, cost control and construction schedules.

- Lippiatt, Barbara, BEES 2.0 Building For Environmental and Economic Sustainability Technical Manual and User Guide (June 2000), teaches a system and method for "selecting environmentally and economically balanced building products" through the simulation/evaluation of a plurality of building designs (set of selected items). Lippiatt further teaches "It is relatively straightforward to select products based on minimum life-cycle economic impacts" (e.g. initial cost, future costs) and that the system utilizes a more complete lifecycle assessment methodology/approach in order to "generate relative environmental performance scores for product alternatives." Lippiatt further teaches that the building/structure performance analysis system and method

further comprises information on a plurality of building components/items including a plurality of insulation types (blown cellulose/fiberglass/wool, fiberglass batt) which the users selects/defines as part of the project structural information.

- FSEC Web Pages (August 2000) teach the University of Florida's efforts to provide systems (tools) and methods to assist the AEC industry in designing and building energy efficient buildings/structures (building design assistance center) wherein these tools include but are not limited to tools for evaluating fenestration systems (windows, doors, etc.), insulation, windows, building designs, energy code compliance (EnergyGauge, FLACom) and the like. FSEC further teaches that "designers can determine the choice of building components that improve energy efficiency while maintaining thermal comfort and cost effectiveness" (Page 4) and that the goal of the building design assistance center is to assist "with selection of appropriate materials and equipment" (Page 5).

- Fuehrlein, Brian et al., Evaluation of EnergyGuage USA (August 2000), teaches a system and method for determining structure/project energy consumption/usage utilizing project structural, weather/climate, mechanical/climate control and other project/structure information.

- Announcing EnergyGauge USA (September 2000) teaches a method and system for determining/evaluating project/structure energy usage and ratings wherein "A key objective of the software is to bring the power of building energy simulations to Home Energy Rating Systems (HERS) scores, assessment of Model Energy Code

(MEC) and state energy code compliance along with evaluation of the economics of improvements" (Page 1, Paragraph 3).

- Lippiatt, Barbara, What's the Buzz: Use BEES to Design Greener, Lower-Cost Buildings (October 2000), teaches a system and method for optimally selecting project/structure items/components utilizing economic and environmental criteria.

- EnergyGuage Web Pages (February 2001) teaches a system and method for performing detailed project/structure performance analysis comprising energy code, energy rating and economic analysis.

- EnergyGauge User Manual (2001) teaches a system and method for evaluating the performance of projects/structures as well as structure/project components/items wherein the system enables users to define buildings/structures using libraries of fenestration, material and construction information/resources that define a plurality of resource/item values.

- Nielsen, Toke et al., Lifecycle Cost Optimization for Buildings with regard to Energy Use (2002), teach a system and method for selecting building designs/materials that minimize total lifecycle as well as meet a plurality of other performance criteria/factors including but not limited to building codes, insulation, glazing, mechanical equipment/systems "e.g. optimize insulation thickness to minimize cost."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott L. Jarrett whose telephone number is (571) 272-7033. The examiner can normally be reached on Monday-Friday, 8:00AM - 5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hafiz Tariq can be reached on (571) 272-6729. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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SJ
10/27/2005

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